

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-120382

(43)Date of publication of application : 23.04.2002

(51)Int.Cl.

B41J 2/175

(21)Application number : 2000-317087

(71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 17.10.2000

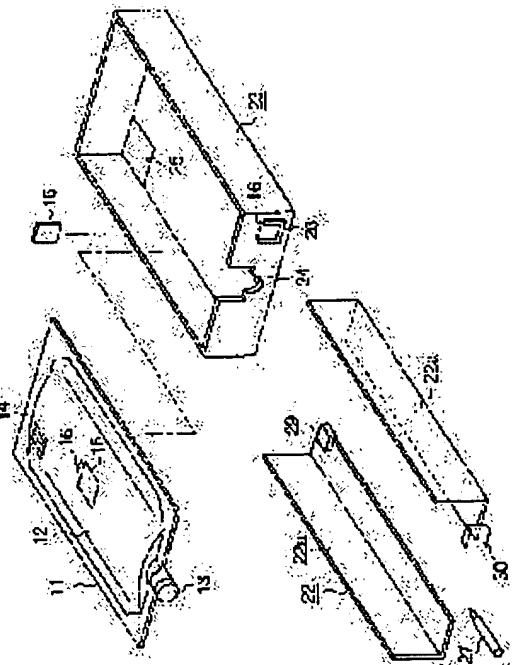
(72)Inventor : MOCHIZUKI SEIJI  
ETSUNO KAZUO

## (54) INK BAG SET, PRINTER AND PRINTER SYSTEM HAVING THE SAME LOADED THEREIN, AND CONTROL METHOD THEREFOR USING THE SAME

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide an ink bag set wherein a use quantity or a residual quantity of ink can be managed at each ink bag, and a printer and a printer system having the ink bag loaded therein.

SOLUTION: The ink bag set comprises an ink bag 11 containing the ink for printing and a memory chip 16 which has data relating to the ink bag 11 written therein and is separated from the ink bag 11. The memory chip 16 is housed in a housing section 15 provided on the ink bag 11, attached to the ink bag 11 with a connection string or housed in an identical bag housing case for the ink bag 11. The printer comprises a bag holding section 22 for setting the ink bag 11 and a data communication section 30 for communicating the data between the printer and the memory chip 16.



### LEGAL STATUS

[Date of request for examination] 30.01.2004

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

**\* NOTICES \***

JPO and NCIPI are not responsible for any  
damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

**CLAIMS****[Claim(s)]**

[Claim 1] The ink bag set characterized by consisting the ink bag with which the ink for printing was held, its ink bag, and another object of a memory chip in which the data about nothing and an ink bag are written.

[Claim 2] Said ink bag is an ink bag set according to claim 1 characterized by consisting of a software case.

[Claim 3] Said ink bag is an ink bag set according to claim 1 or 2 characterized by having a stowage for containing a memory chip.

[Claim 4] The ink bag set according to claim 1 or 2 characterized by attaching said memory chip through a connection funiculus to an ink bag.

[Claim 5] The ink bag set according to claim 1 or 2 characterized by holding said ink bag and memory chip in one bag maintenance case.

[Claim 6] The ink bag set characterized by consisting the ink bag to which identification marking was given while the ink for printing was held, its ink bag, and another object of a memory chip in which the data corresponding to nothing and said identification marking are written.

[Claim 7] The ink bag set according to claim 6 characterized by writing the data corresponding to the identification marking of two or more ink bags in said memory chip.

[Claim 8] The printer characterized by having the bag set section for setting the ink bag with which the ink for printing was held, and the data delivery section which delivers data between said ink bags and memory chips of another object.

[Claim 9] Said bag set section is a printer according to claim 8 characterized by constituting so that the ink bag which consists of a software case may be set.

[Claim 10] The bag set section for setting the ink bag with which the ink for printing was held, The data delivery section which delivers data between said ink bags and memory chips of another object, The mark reading section which reads the identification marking attached on said ink bag, The printer characterized by having compared the data read in the memory chip by said data delivery section with the data read in identification marking by the mark reading section, and having a distinction means to distinguish the compatibility of a memory chip and an ink bag.

[Claim 11] The bag set section for setting the ink bag with which the ink for printing was held, The data delivery section which delivers data between said ink bags and memory chips of another object, When it is supervised that desorption exchange of an ink bag and a memory chip is not mostly performed at the same stage by monitor means to supervise desorption exchange of said ink bag and a memory chip, and its monitor means, The printer characterized by having the control means to which the control action for warning is made to carry out.

[Claim 12] Said monitor means is a printer according to claim 11 characterized by consisting of

the data delivery section which delivers data between memory chips, and the mark reading section which reads the identification marking attached on the ink bag.

[Claim 13] The bag set section for setting the ink bag with which the ink for printing was held, The printer equipped with the data delivery section which delivers data between said ink bags and memory chips of another object, The data which received the signal from this printer and were read in the memory chip by said data delivery section, The printer system which consists of computers which were made to perform distinction actuation which compares the data read in identification marking by the mark reading section, and distinguishes the compatibility of a memory chip and an ink bag.

[Claim 14] The bag set section for setting the ink bag with which the ink for printing was held, The printer equipped with the data delivery section which delivers data between said ink bags and memory chips of another object, When the signal from this printer is received, desorption exchange of said ink bag and a memory chip is supervised and it is supervised that desorption exchange of an ink bag and a memory chip is not performed mostly at the same stage, The printer system which consists of computers which were made to perform control action for warning.

[Claim 15] The control approach characterized by equipping a printer with an ink backset, comparing the data obtained from the ink back with the data obtained from the memory chip in which the data about this ink bag are written, and distinguishing the compatibility of a memory chip and the ink back.

[Claim 16] The control approach characterized by to perform warning actuation when said ink back and desorption exchange of said memory chip are supervised and it is supervised from the data which equipped the printer with the ink backset and were obtained from the ink back, and the data obtained from the memory chip in which the data about this ink bag are written that these ink back and desorption exchange of a memory chip are not performed mostly at the same stage.

## DETAILED DESCRIPTION

---

### [Detailed Description of the Invention]

#### [0001]

[Field of the Invention] This invention breathes out an ink droplet from a nozzle, and relates to the printer equipped with the ink bag set used for the ink jet-type printer which prints in a record form, and its ink bag set.

#### [0002]

[Description of the Prior Art] As an ink bag used for this kind of printer, while holding the ink for printing in a software case, what gave identification marking to the outside surface of that software case is known. The data about the attribute of ink, such as an ink color, are memorized by said identification marking, and where a printer is equipped with an ink bag, reading appearance of the attribute data of ink is carried out from identification marking by the reading section prepared in the printer. And an alarm display etc. is performed, when management of the amount of the ink used of an ink bag or a residue is performed by the control section of a printer and the amount of the ink used or residue of one ink bag reaches a predetermined value.

#### [0003]

[Problem(s) to be Solved by the Invention] However, in this conventional ink bag, identification marking is prepared in the outside surface of an ink bag fixed as mentioned above, and residue

management of ink is performed by the control section of a printer. For this reason, when using it again, having equipped the printer with that ink bag or another ink back after being in the middle of the activity of ink and removing an ink bag from a printer, the amount (residue) of the data used memorized by the control section of the actual amount used (residue) and a printer was different, and there was a problem that management of the amount of the ink used (residue) could not be performed continuously.

[0004] Moreover, since, as for identification marking, -dimensional [ 1 ] or a two-dimensional bar code is used in many cases, however such a bar code has little storage capacity and rewriting cannot do it, either, sufficient management cannot be performed.

[0005] This invention is made paying attention to the trouble which exists in such a Prior art. The object is to offer the ink bag set which can deal with a lot of data about the ink back, the printer equipped with it, and a printer system while being able to perform management of the amount of the ink used, or a residue for every ink bag.

[0006]

[Means for Solving the Problem] In order to attain the above-mentioned object, in invention according to claim 1 concerning an ink bag set, it is characterized by consisting of the ink bag with which the ink for printing was held, its ink bag, and a memory chip in which the data about nothing and an ink bag are written in another object.

[0007] Therefore, according to this invention according to claim 1, management of the amount of the ink used or a residue can be performed for every ink bag by writing the amount used or the residue of ink in a memory chip. Therefore, when using it again, equipping a printer with the ink bag after being in the middle of the activity of ink and removing an ink bag from a printer, management of the amount of the ink used or a residue can be performed continuously.

Moreover, since a lot of data can be written in, ink back management can fully be performed to a memory chip based on a lot of data.

[0008] In invention according to claim 2, said ink bag is characterized by consisting of a software case in invention according to claim 1. Therefore, according to this invention according to claim 2, since the memory chip is an ink bag and another object, even if the ink bag consists of a software case, a memory chip can be prepared corresponding to an ink bag.

[0009] In invention according to claim 3, said ink bag is characterized by having a stowage for containing a memory chip in invention according to claim 1 or 2. Therefore, while according to this invention according to claim 3 being able to deal with them in one and being able to equip a printer by containing a memory chip to the stowage of an ink bag, fear of loss of a memory chip can be lessened.

[0010] In invention according to claim 4, it is characterized by attaching said memory chip through a connection funiculus to an ink bag in invention according to claim 1 or 2. Therefore, while according to this invention according to claim 4 being able to deal with an ink bag and a memory chip in one and being able to equip a printer with them in the condition of having been connected through the connection funiculus, fear of loss of a memory chip can be lessened.

[0011] In invention according to claim 5, it is characterized by holding said ink bag and memory chip in one bag maintenance case in invention according to claim 1 or 2. Therefore, according to this invention according to claim 5, in the condition of having held in one bag maintenance case, an ink bag and a memory chip can be dealt with in one, and a printer can be equipped with them.

[0012] Moreover, in invention according to claim 6 concerning an ink bag set, it is characterized by consisting of the ink bag to which identification marking was given while the ink for printing was held, its ink bag, and a memory chip in which the data corresponding to nothing and said

identification marking are written in another object. Therefore, when a printer is equipped with an ink bag and a memory chip by writing the data of the identification marking on an ink bag in a memory chip according to this invention according to claim 6, it can be used for decision of those compatibility etc.

[0013] In invention according to claim 7, it is characterized by writing in the data corresponding to the identification marking of two or more ink bags in invention according to claim 6 at said memory chip. Therefore, according to this invention according to claim 7, the attribute data read in the identification marking of two or more ink bags by one memory chip can be written in, and data processing of those ink bags can be performed easily.

[0014] Furthermore, in invention according to claim 8 concerning a printer, it is characterized by having the bag set section for setting the ink bag with which the ink for printing was held, and the data delivery section which delivers data between said ink bags and memory chips of another object. Therefore, according to this invention according to claim 8, while setting an ink bag to the bag set section, where the data delivery section and a corresponding location are equipped with a memory chip, management of the amount of the ink used or a residue etc. can be performed easily.

[0015] In invention according to claim 9, said bag set section is characterized by constituting so that the ink bag which consists of a software case may be set in invention according to claim 8. Therefore, according to this invention according to claim 9, the ink bag which consists of a software case can be set to the bag set section easily and certainly.

[0016] moreover, in invention according to claim 10 concerning a printer The bag set section for setting the ink bag with which the ink for printing was held, The data delivery section which delivers data between said ink bags and memory chips of another object, The mark reading section which reads the identification marking attached on said ink bag, It is characterized by having compared the data read in the memory chip by said data delivery section with the data read in identification marking by the mark reading section, and having a distinction means to distinguish the compatibility of a memory chip and an ink bag.

[0017] Therefore, according to this invention according to claim 10, when a printer is equipped with an ink bag and a memory chip, compatibility of that memory chip and ink bag can be judged to accuracy. Therefore, the inequality of a memory chip and an ink bag can be controlled.

[0018] furthermore, in invention according to claim 11 concerning a printer The bag set section for setting the ink bag with which the ink for printing was held, The data delivery section which delivers data between said ink bags and memory chips of another object, When it is supervised that desorption exchange of an ink bag and a memory chip is not mostly performed at the same stage by monitor means to supervise desorption exchange of said ink bag and a memory chip, and its monitor means, It is characterized by having the control means to which the control action for warning is made to carry out.

[0019] Therefore, according to this invention according to claim 11, in case desorption exchange of an ink bag and the memory chip is carried out to a printer, it can supervise proper whether those desorption exchange was performed mostly at the same stage. Therefore, it can control that desorption exchange only of either of an ink bag and a memory chip is carried out, and can prevent that exchange of another side is forgotten [ most ].

[0020] In invention according to claim 12, said monitor means is characterized by consisting of the data delivery section which delivers data between memory chips, and the mark reading section which reads the identification marking attached on the ink bag in invention according to claim 11. Therefore, it is not necessary to prepare a pilot switch etc. independently as a monitor

means, and, according to this invention according to claim 12, a configuration can be simplified. [0021] The bag set section for setting the ink bag with which the ink for printing was held in invention according to claim 13, The printer equipped with the data delivery section which delivers data between said ink bags and memory chips of another object, The data which received the signal from this printer and were read in the memory chip by said data delivery section, The data read in identification marking by the mark reading section are compared, and it consists of computers which were made to perform distinction actuation which distinguishes the compatibility of a memory chip and an ink bag.

[0022] Therefore, according to this invention according to claim 13, when a printer is equipped with an ink bag and a memory chip, compatibility of that memory chip and ink bag can be judged to accuracy. Therefore, the inequality of a memory chip and an ink bag can be controlled. Moreover, by not preparing the device in which distinction actuation which distinguishes the compatibility of a memory chip and an ink bag by the comparison of data is performed in the interior of a printer, in order to perform this, since \*\* is also good, the configuration of a printer can be simplified.

[0023] The bag set section for setting the ink bag with which the ink for printing was held in invention according to claim 14, The printer equipped with the data delivery section which delivers data between said ink bags and memory chips of another object, When the signal from this printer is received, desorption exchange of said ink bag and a memory chip is supervised and it is supervised that desorption exchange of an ink bag and a memory chip is not performed mostly at the same stage, It is made to consist of computers which were made to perform control action for warning.

[0024] Therefore, according to this invention according to claim 14, in case desorption exchange of an ink bag and the memory chip is carried out to a printer, it can supervise proper whether those desorption exchange was performed mostly at the same stage. Therefore, it can control that desorption exchange only of either of an ink bag and a memory chip is carried out, and can prevent that exchange of another side is forgotten [ most ]. Moreover, by not preparing the structure which supervises proper whether desorption exchange of an ink bag and a memory chip was performed mostly at the same stage in the interior of a printer, in order to perform this, since \*\* is also good, the configuration of a printer can be simplified.

[0025] In invention according to claim 15, a printer is equipped with an ink backset, the data obtained from the ink back are compared with the data obtained from the memory chip in which the data about this ink bag are written, and the compatibility of a memory chip and the ink back is distinguished. Therefore, according to this invention according to claim 15, the same operation effectiveness as said claim 10 can be acquired.

[0026] In invention according to claim 16, a printer is equipped with an ink backset, and when it is supervised from the data obtained from the ink back, and the data obtained from the memory chip in which the data about this ink bag are written that supervise said ink back and desorption exchange of said memory chip, and these ink back and desorption exchange of a memory chip are not performed mostly at the same stage, it is made to perform warning actuation. Therefore, according to this invention according to claim 16, the same operation effectiveness as said claim 11 can be acquired.

[0027]

[Embodiment of the Invention] (The 1st operation gestalt) Below, the 1st operation gestalt of this invention is explained based on drawing 1 - drawing 5.

[0028] First, the ink bag set of this operation gestalt is explained. As shown in drawing 1 and

drawing 2 , the body 12 of an ink bag of the ink bag 11 is formed in the shape of a software case with the laminate film which vapor-deposited aluminum to the polyethylene film which has for example, gas barrier property, and the ink for printing is held in the interior. The ink feed hopper 13 protrudes on the edge of the body 12 of an ink bag, and the ink within the body 12 of an ink bag is taken out from this ink feed hopper 13.

[0029] The identification marking 14 which consists of a bar code etc. is given to the edge section of the rear face of said body 12 of an ink bag. Data, such as a class of the attribute data about the ink in the ink bag 11, for example, ink, a color, the date of manufacture, and a plant, are recorded on this identification marking 14.

[0030] The stowage 15 of the shape of a transparent pocket is formed in the center section of the top face of said body 12 of an ink bag. The memory chip 16 which makes the ink bag 11 and another object in a stowage 15 is contained possible [ ejection ], and this memory chip 16 consists of contact mold memory IC etc. The storage region for writing in data, such as the attribute data of the ink in the ink bag 11 corresponding to said identification marking 14, for example, the class of ink, a color, the date of manufacture, and a plant, is established in this memory chip 16. Furthermore, the storage region for writing in the amount of existing [ used ] and residue of ink in the ink bag 11 is established in the memory chip 16.

[0031] Next, the printer which equips with and uses the ink bag set which consists of said ink bag 11 and memory chip 16 is explained. As shown in drawing 1 and drawing 2 , along with the platen which a print head 21 does not illustrate, it is arranged movable by the body 20 of a printer. In the front face of 1 side of the body 20 of a printer, partition formation of two or more bag attaching parts 22 is carried out, and a pair each guide plate 22a is prepared in those bag attaching parts 22. And the ink bag 11 of the shape of said software case is set to each bag attaching part 22 in the condition of having held in the cartridge case 23.

[0032] Said cartridge case 23 is formed in the shape of a hard case by plastics etc. Output port 24 is formed in the end side of a cartridge case 23, and the ink feed hopper 13 of the ink bag 11 held in the cartridge case 23 projects outside from this output port 24.

[0033] A window part 25 is formed in the 1 side base of said cartridge case 23, and the identification marking 14 on the ink bag 11 held in the cartridge case 23 is exposed to a lower part from this window part 25. In case the chip applied part 26 is formed in the outside surface of a cartridge case 23, the ink bag 11 is held in a cartridge case 23 and it sets to the bag attaching part 22 so that output port 24 may be adjoined, a memory chip 16 is taken out from the stowage 15 on the ink bag 11, and this chip applied part 26 is equipped.

[0034] As shown in drawing 1 and drawing 2 , opposite arrangement of the supply needle 27 is carried out at each bag attaching part 22 of said body 20 of a printer, and it connects with the print head 21 through the supply tube 28. And where the ink bag 11 is held in a cartridge case 23, when it is set to the bag attaching part 22, the supply needle 27 penetrates the ink feed hopper 13 of the ink bag 11, and is inserted into the body 12 of an ink bag. In this condition, with printing actuation of a print head 21, the ink in the ink bag 11 is supplied to a print head 21 through the supply needle 27 and the supply tube 28, and printing is performed on the record form P.

[0035] The mark reading section 29 is arranged in the edge of one guide plate 22a of each of said bag attaching part 22, and the attribute data of ink is read in the identification marking 14 on the ink bag 11 by this mark reading section 29. The data delivery section 30 is arranged in the edge of guide plate 22a of another side of each bag attaching part 22, and reading is performed in the write-in list about the attribute data of ink, and the data of the amount of existing [ used ], or a residue by this data delivery section 30 in the state of contact to the memory chip 16 on a

cartridge case 23.

[0036] Next, the circuitry of the printer which consists of the above structures is explained. As shown in drawing 3, the central processing unit (CPU) 33 which controls actuation of the whole printer is formed in the body 20 of a printer, and the random access memory (RAM) 35 which stores temporarily the read-only memory (ROM) 34 which stored the program of operation, and working data is connected to the CPU33. The printing mechanism 36 containing said print head 21 is connected to CPU33, and an active signal is outputted to this printing mechanism 36.

Moreover, the mark reading section 29 and the data delivery section 30 are connected to CPU33, and delivery of the attribute data of ink etc. is performed between this mark reading section 29 and the data delivery section 30.

[0037] Furthermore, the external personal computer (it is hereafter indicated as PC) 38 is connected to CPU33 within said body 20 of a printer through an interface 37, and delivery of print data or an alarm display signal is performed to it between this PC38. When the displays 39, such as a display unit, are connected to PC38 and an alarm display signal is outputted to PC38 from CPU33, a warning message is displayed on this display 39. A keyboard 40 is connected to PC38 and various data are inputted from this keyboard 40.

[0038] Moreover, in this operation gestalt, while the monitor means for supervising desorption exchange of the ink bag 11 and a memory chip 16 by said CPU33, the mark reading section 29, and the data delivery section 30 is made to serve a double purpose, the distinction means is constituted by CPU33. And when it is checked by the mark reading section 29 and the data delivery section 30 that desorption exchange of the ink bag 11 and a memory chip 16 is not performed mostly at the same stage, That is, when it is detected that desorption exchange of another side is not carried out even if it goes through predetermined time after desorption exchange of either of the ink bag 11 and a memory chip 16 was carried out, the alarm display signal to which desorption exchange of another side is urged from CPU33 is outputted.

[0039] Furthermore, the distinction means is constituted by said CPU33 in this operation gestalt. And the attribute data of the ink read in the identification marking 14 on the ink bag 11 in the mark reading section 29 when the body 20 of a printer was equipped with the ink bag 11 and a memory chip 16, The attribute data of the ink read in the memory chip 16 in the data delivery section 30 is compared by CPU33, the compatibility of the ink bag 11 and a memory chip 16 is distinguished, and when it is nonconformance, an alarm display signal to that effect is outputted.

[0040] And in case the ink in the ink bag 11 with which said bag attaching part 22 was equipped is used and printing is performed by the print head 21 on the record form P, based on control of CPU33, the data of the amount of existing [ used ] of ink or a residue are written in a memory chip 16 by the data delivery section 30. And when the amount of the addition used or addition residue of ink written in the memory chip 16 reaches a predetermined value, the alarm display signal to which exchange of the ink bag 11 is urged from CPU33 is outputted.

[0041] Next, actuation of the printer equipped with the ink bag set and it which were constituted as mentioned above is explained. First, the monitor actuation at the time of desorption exchange of the ink bag 11 and a memory chip 16 is explained according to the flow chart of drawing 4. If desorption exchange of either of the ink bag 11 and a memory chip 16 is carried out, the exchange actuation will be detected in the mark reading section 29 or the data delivery section 30 (step S1). Then, to carry out desorption exchange of another side of the ink bag 11 and a memory chip 16, and to detect the exchange actuation in the data delivery section 30 or the mark reading section 29 is waited (step S2).

[0042] And when desorption exchange of another side is not performed even if it carries out

fixed time amount progress after desorption exchange of one side of the ink bag 11 and a memory chip 16 is carried out, an alarm display signal is outputted to a display 39 through PC38 from (step S3) and CPU33. Thereby, a warning message, such as "please exchange for an ink bag [ finishing / exchange ] at a corresponding memory chip" or "please exchange for a memory chip [ finishing / exchange ] and a corresponding ink bag", is displayed on a display 39 (step S4). [0043] Subsequently, reading and processing actuation of data at the time of wearing of the ink bag 11 and a memory chip 16 are explained according to the flow chart of drawing 5. If a cartridge case 23 is set to the bag attaching part 22 of the body 20 of a printer where the chip applied part 26 of a cartridge case 23 is equipped with a memory chip 16 while the ink bag 11 is held in a cartridge case 23, the data of the identification marking 14 on the ink bag 11 will be read by the mark reading section 29 (step S5). It is distinguished whether with it, the data of a memory chip 16 are read by the data delivery section 30 (step S6), and the reading data from the memory chip 16 exist (step S7).

[0044] In distinction of said step S7, when the reading data from a memory chip 16 exist, it is distinguished whether the reading data from identification marking 14 and the reading data from a memory chip 16 are in agreement (step S8). And when the ink bag 11 and a memory chip 16 do not correspond when both data are not in agreement namely, an alarm display signal is outputted to a display 39 through PC38 from CPU33. Thereby, for example, "ink bag and a memory chip are not in agreement. A warning message, such as please reequip a match", is displayed on a display 39 (step S9).

[0045] On the other hand, when the reading data from a memory chip 16 do not exist in distinction of said step S7, the attribute data of the ink read in identification marking 14 is written in a memory chip 16 by the data delivery section 30 (step S10). Then, if printing actuation is started based on the attribute data of a memory chip 16, the activity of the ink in the ink bag 11 will be detected (step S11), and the data or the residue of the amount of existing [ used ] of the ink will be written in a memory chip 16 by the data delivery section 30 (step S12). Moreover, in distinction of said step S8, when the reading data from identification marking 14 and the reading data from a memory chip 16 are in agreement, it goes on to steps S11 and S12, and the aforementioned actuation is performed.

[0046] Then, actuation of said steps S11-S13 is repeatedly performed until it is distinguished whether the amount of the addition used or addition residue of ink written in said memory chip 16 reached the predetermined value (step S13) and the amount of the addition used or addition residue of ink reaches a predetermined value. And if the amount of the addition used or addition residue of ink reaches a predetermined value, an alarm display signal will be outputted to a display 39 through PC38 from CPU33. Thereby, the ink of for example, "ink bag was lost. A warning message, such as please exchange for a new thing", is displayed on a display 39 (step S14).

[0047] Therefore, according to this operation gestalt, the following effectiveness can be acquired.

(1) It consists of the ink bag 11 with which the ink for printing was held, its ink bag 11, and a memory chip 16 in which the data about nothing and the ink bag 11 are written in another object in this ink bag set. For this reason, management of the amount of the ink used or a residue can be performed every ink bag 11 by writing the amount used or the residue of ink in a memory chip 16. Therefore, by detaching and attaching a memory chip 16 simultaneously, when using it again, equipping a printer with the ink bag 11 after being in the middle of the activity of ink and removing the ink bag 11 from a printer, management of the amount of the ink used or a residue

can be performed continuously. And since writing and elimination are also free while a lot of data can be memorized by the memory chip unlike the identification marking which consists of a bar code, management of the ink bag 11 can be ensured finely. Moreover, even if all the ink of the ink bag 11 is used, since the data of other ink bags 11 can also be written in, unlike the ink bag 11, a memory chip 16 can also be used for a memory chip 16 as it is.

[0048] (2) In this ink bag set, even if the ink bag 11 consists of software cases, a memory chip 16 can be formed corresponding to the ink bag 11, because the memory chip 16 is the ink bag 11 and another object.

[0049] (3) In this ink bag set, it has the stowage 15 for said ink bag 11 to contain a memory chip 16. For this reason, while being able to deal with them in one by containing a memory chip 16 to the stowage 15 of the ink bag 11, even if a memory chip 16 is another object, there is little fear of loss of a memory chip 16.

[0050] (4) In this ink bag set, identification marking 14 is given to said ink bag 11. For this reason, when a printer is equipped with the ink bag 11 and a memory chip 16 by writing the data of the identification marking 14 on the ink bag 11 in a memory chip 16, it can be used for decision of those compatibility etc.

[0051] (5) In the printer equipped with this ink bag set, the bag attaching part 22 for setting the ink bag 11 with which the ink for printing was held, and the data delivery section 30 which delivers data between the ink bag 11 and the memory chip 16 of another object are formed. For this reason, while setting the ink bag 11 to the bag attaching part 22, where the data delivery section 30 and a corresponding location are equipped with a memory chip 16, management of the amount of the ink used or a residue etc. can be performed easily.

[0052] (6) In this printer, it is in the condition which held the ink bag 11 which consists of a software case in the cartridge case 23, and it is constituted so that it may set to the bag attaching part 22. For this reason, even if the ink bag 11 is a software case, it can set to the body 20 of a printer easily and certainly.

[0053] (7) In this printer, said memory chip 16 memorizes the attribute data of ink, and reads attribute data from a memory chip 16 for printing actuation of said data delivery section 30. For this reason, the attribute data of ink can be read from a memory chip 16, and printing actuation can be controlled exactly.

[0054] (8) In this printer, when said data delivery section 30 writes in the data of the amount of existing [ used ] of ink, or a residue to a memory chip 16 and the amount of the addition used or an addition residue reaches a predetermined value, control action for warning is performed. For this reason, the residue or the amount of ink of the ink bag 11 used can be managed proper, it can warn of ink having been lost exactly, and the ink bag 11 can be exchanged to suitable timing. Therefore, the inconvenient situations, such as an ink piece, can be prevented beforehand.

[0055] (9) In this printer, the data read in the memory chip 16 by the data delivery section 30 are compared with the data read in identification marking 14 by the mark reading section 29, and the compatibility of a memory chip 16 and the ink bag 11 is distinguished. For this reason, when a printer is equipped with the ink bag 11 and a memory chip 16, compatibility of that memory chip 16 and ink bag 11 can be judged to accuracy. Therefore, the inequality of a memory chip 16 and the ink bag 11 can be controlled.

[0056] (10) In this printer, when desorption exchange of the ink bag 11 and a memory chip 16 is supervised and it is supervised that desorption exchange of that ink bag 11 and a memory chip 16 is not performed mostly at the same stage, control action for warning is performed. For this reason, in case desorption exchange of the ink bag 11 and the memory chip 16 is carried out to a

printer, it can supervise proper whether those desorption exchange was performed mostly at the same stage. Therefore, it can control that desorption exchange only of either of the ink bag 11 and a memory chip 16 is carried out, and can prevent that exchange of another side is forgotten [ most ].

[0057] (11) In this printer, a means to supervise desorption exchange of said ink bag 11 and a memory chip 16 is constituted between memory chips 16 by the data delivery section 30 which delivers data, and the mark reading section 29 which reads the identification marking 14 attached on the ink bag 11. For this reason, it is not necessary to prepare a pilot switch etc. independently as a monitor means, and a configuration can be simplified.

[0058] (The 2nd operation gestalt) Next, the 2nd operation gestalt of this invention is explained focusing on a different part from said 1st operation gestalt. In addition, in each operation gestalt after the 2nd operation gestalt, it explains focusing on a different part as mentioned above from the 1st operation gestalt.

[0059] Now, in this 2nd operation gestalt, as shown in drawing 6, each bag attaching part 22 and two or more corresponding chip insertion sections 43 are formed in the front face of 1 side of the body 20 of a printer. And where the ink bag 11 is held in a cartridge case 23, in case it sets to the bag attaching part 22 of a printer, a memory chip 16 is taken out from the stowage 15 on the ink bag 11, and it inserts in the bag attaching part 22 and the corresponding chip insertion section 43.

[0060] In the body 20 of a printer, two or more data delivery sections 30 are arranged so that it may correspond with said each chip insertion section 43. And delivery of the attribute data of the ink in the ink bag 11 and the data of the amount of existing [ used ] of ink and a residue is performed between the memory chips 16 and the data delivery sections 30 which were inserted into the chip insertion section 43.

[0061] Therefore, according to this 2nd operation gestalt, the effectiveness of a publication and the same effectiveness can be acquired to (1) - (11) in said 1st operation gestalt.

[0062] (The 3rd operation gestalt) Next, the 3rd operation gestalt of this invention is explained.

[0063] Now, in this 3rd operation gestalt, as shown in drawing 7, the memory chip 16 is attached to the edge of the ink bag 11 through the connection funiculus 44. And where the ink bag 11 is held in a cartridge case 23, in case it sets to the bag attaching part 22 of a printer, the chip applied part 26 of the outside surface of a cartridge case 23 is equipped with the memory chip 16 attached to the ink bag 11.

[0064] Therefore, according to this 3rd operation gestalt, in addition to the effectiveness of a publication, the following effectiveness can be acquired to (1) in said each operation gestalt, (2), and (4) - (11).

[0065] (12) In this ink bag set, the memory chip 16 is attached through the connection funiculus 44 to the ink bag 11. For this reason, where the ink bag 11 and a memory chip 16 are connected by the connection funiculus 44, while being able to deal with it in one and being able to equip easily to a printer, most loss of a memory chip 16 can be prevented.

[0066] (The 4th operation gestalt) Next, the 4th operation gestalt of this invention is explained. Now, in this 4th operation gestalt, as shown in drawing 8, it is sold in the condition of having held in the bag maintenance case 45 where the ink bag 11 which consists of a software case consists of a hard case, and breakage by the external force of the ink bag 11 is controlled by this. Moreover, the memory chip 16 is also held in the same bag maintenance case 45 as the ink bag 11.

[0067] And in case the ink bag 11 is picked out from the bag maintenance case 45 and it sets to the bag attaching part 22 of a printer through a cartridge case 23, a memory chip 16 is taken out

from the bag maintenance case 45, and the chip applied part 26 on a cartridge case 23 is equipped, or it inserts in the chip insertion section 43 of the body 20 of a printer.

[0068] Therefore, according to this 4th operation gestalt, the same effectiveness as (1) in said each operation gestalt, (2), and (4) - (11) can be acquired.

[0069] (The 5th operation gestalt) Next, the 5th operation gestalt of this invention is explained.

[0070] Now, in this 5th operation gestalt, as shown in drawing 9, packing maintenance of the ink bag 11 which consists of two or more software cases is carried out as 1 set into the bag maintenance case 45 which consists of a hard case. In this case, two or more ink bags 11 which two or more ink bags 11 which held unique ink were packed up as 1 set, or held the ink of the same color are packed up as 1 set. And breakage by the external force of each ink bag 11 is controlled with this packing.

[0071] Moreover, in said bag maintenance case 45, one memory chip 16 is held corresponding to 1 set of ink bags 11. The storage region which can write in the attribute data of the ink corresponding to the identification marking 14 of two or more ink bags 11, and the storage region which can write in the data of the amount of existing [ used ] of ink and the data of a residue about two or more ink bags 11 are established in this memory chip 16.

[0072] And every one ink bag 11 which made 1 set two or more ink bags 11 which held unique ink, and held the ink of ejection or the same color from the bag maintenance case 45 is picked out from the bag maintenance case 45, and it sets to the bag attaching part 22 of a printer through a cartridge case 23. In this case, a memory chip 16 is taken out from the bag maintenance case 45, and the chip applied part 26 on a cartridge case 23 is equipped, or it inserts in the chip insertion section 43 of the body 20 of a printer. In this case, data processing of the ink about two or more ink bags 11 is performed by one memory chip 16.

[0073] Therefore, according to this 5th operation gestalt, in addition to the effectiveness of a publication, the following effectiveness can be acquired to (1) in said each operation gestalt, (2), and (4) - (11).

[0074] (13) In this ink bag set, two or more ink bags 11 are held as 1 set at the bag maintenance case 45. For this reason, it is convenient, when using two or more ink bags 11 which held unique ink for a printer, equipping it with them simultaneously, when using for a printer two or more ink bags 11 which held the ink of the same color, equipping it with them in order, or when selling.

[0075] (14) In this ink bag set, the memory chip 16 is formed corresponding to 1 set of ink bags 11. For this reason, the attribute data of two or more ink bags 11 by one memory chip 16 etc. can be processed easily.

[0076] (15) In this ink bag set, the data corresponding to the identification marking 14 of two or more ink bags 11 are written in said memory chip 16. For this reason, the attribute data read in the identification marking 14 of two or more ink bags 11 by one memory chip 16 can be written in every ink bag 11 certainly, and data processing of those ink bags 11 can be performed easily.

[0077] (16) In this ink bag set, the storage region which can write the data about two or more ink residues or amount of the ink bag 11 used in said memory chip 16 is prepared. For this reason, when using for a printer two or more ink bags 11 which held the ink of the same color, equipping it with them in order, the amount used or the residue of ink of each ink bag 11 can be managed continuously.

[0078] (17) In this ink backset, since the ink back's information can be written in a memory chip 16 when it is the same ink back altogether, a memory chip 16 can be used about.

[0079] (The 6th operation gestalt) Next, the 6th operation gestalt of this invention is explained. Now, in this 6th operation gestalt, as shown in drawing 10, packing maintenance of the ink bag

11 which consists of two or more software cases where unique ink was held is carried out as 1 set into the bag maintenance case 45 which consists of a hard case. Two or more bores 46 are formed in the side attachment wall of the bag maintenance case 45, and the ink feed hopper 13 of each ink bag 11 is exposed outside through these bores 46.

[0080] One memory chip 16 is attached in the side-attachment-wall outside surface of said bag maintenance case 45 corresponding to 1 set of ink bags 11. The storage region which can write in the attribute data of the ink corresponding to the identification marking 14 of two or more ink bags 11, and the storage region which can write in the data of the amount of existing [ used ] of ink and the data of a residue about two or more ink bags 11 are established in this memory chip 16.

[0081] Moreover, the bag attaching part 22 in a printer is constituted so that two or more ink bags 11 can be set in the condition [ having held in the bag maintenance case 45 ]. And while two or more supply needles 27 which can be penetrated to the ink feed hopper 13 of each ink bag 11 are arranged, the data delivery section 30 which can respond to the memory chip 16 on the bag maintenance case 45 is formed in this bag attaching part 22.

[0082] Therefore, according to this 6th operation gestalt, in addition to the effectiveness of a publication, the following effectiveness can be acquired to (1) in said each operation gestalt, (2), and (4) - (11) and (13) - (16).

[0083] (18) The memory chip 16 is attached in the bag maintenance case 45 in this ink bag set. For this reason, if the ink bag 11 is set to the bag attaching part 22 in the condition of having been held at the bag maintenance case 45, it can equip with the memory chip 16 attached in that bag maintenance case 45 easily to a printer.

[0084] (19) In the printer equipped with this ink bag, the bag attaching part 22 can set now in the condition [ having held two or more ink bags 11 in the bag maintenance case 45 ]. For this reason, two or more ink bags 11 can be picked out from the bag maintenance case 45, it is not necessary to set to the bag attaching part 22, and that set actuation can be performed easily.

[0085] (Example of modification) In addition, it changes as follows and this operation gestalt can also take shape.

- In the aforementioned 1st and 3rd operation gestalt, without forming the ink bag 11 in a hard case, and holding the ink bag 11 in a cartridge case 23, you may constitute so that it may set to the bag attaching part 22 of a printer directly. In this case, the memory chip 16 which was contained by the stowage 15 on the ink bag 11, or was attached to the ink bag 11 through the connection funiculus 44 is constituted so that it may insert in the chip insertion section 43 of the body 20 of a printer like said 2nd operation gestalt.

[0086] - In the aforementioned 4th operation gestalt, without using a cartridge case 23, you may constitute from a condition [ having held the ink bag 11 which consists of a software case in the bag maintenance case 45 which consists of a hard case ] so that it may set to the bag attaching part 22 of a printer directly. In this case, like said 6th operation gestalt, a memory chip 16 is constituted so that it may attach in the side-attachment-wall outside surface of the bag maintenance case 45.

[0087] - You may make it form a memory chip 16 so that it may correspond to each of 1 set of ink bags 11, and may make it form memory chips 16 fewer than the number of 1 set of ink bags 11 in the aforementioned 5th operation gestalt.

[0088] - In the aforementioned 6th operation gestalt, two or more ink bags 11 may be formed in a hard case, and you may constitute from a condition [ having held those ink bags 11 in the bag maintenance case 45 ] so that it may set to the bag attaching part 22 of a printer.

[0089] - In each aforementioned operation gestalt, it may constitute from non-contact mold memory, and a memory chip 16 may be constituted so that data may be transmitted through the data delivery section 30, light, etc. which were prepared in the printer side.

[0090] - In each aforementioned operation gestalt, the identification marking 14 on the ink bag 11 may be omitted, and the attribute data of the ink about the ink bag 11 etc. may be beforehand written in to a memory chip 16, and you may constitute so that printing actuation may be controlled.

[0091] - In each aforementioned operation gestalt, pilot switches, such as a proximity switch, may be prepared as the ink bag 11 and a monitor means of desorption exchange of a memory chip 16, and you may constitute so that a detecting signal may be outputted from these pilot switches at the time of desorption exchange of the ink bag 11 and memory chip 16 to a printer.

[0092] - In each aforementioned operation gestalt, PC38 of the exterior of the body 20 of a printer may be made to perform control action of warning when the monitor, the amount of the addition used, or addition residue of decision of the adaptability of the ink bag 11 and memory chip 16 by CPU33 stored in the body 20 of a printer or desorption exchange of the ink bag 11 and a memory chip 16 reaches a predetermined value etc. Moreover, it not only connects with PC, but the printer connected to fax or a copy may be made to perform. That is, all the computers [ the computer of a publication ] that can be carried out by not only PC generally called a computer but the processing operation shall be included in a claim.

[0093] Next, the technical thought except having indicated to the claim which can be grasped from the above-mentioned operation gestalt and example of another is indicated below with those effectiveness.

[0094] (1) An ink bag set given in any 1 term of claims 1 - claims 5 which are characterized by giving identification marking to said ink bag.

[0095] Therefore, when a printer is equipped with an ink bag and a memory chip by writing the data of the identification marking on an ink bag in a memory chip according to invention given in this (1), it can be used for decision of those compatibility etc.

[0096] (2) An ink bag set given in any 1 term of claim 1 characterized by holding in a bag maintenance case, having used as 1 set the ink bag which is plurality - claim 5, and the aforementioned (1) terms.

[0097] Therefore, according to invention given in this (2), two or more ink bags are held as 1 set at the bag maintenance case. For this reason, it is convenient when [ which uses two or more ink bags which held the ink of the same color for a printer, equipping it with them in order ] using two or more ink bags which held unique ink for a printer, equipping it with them simultaneously, and case, or bundling up and selling.

[0098] (3) An ink bag set given in the above (2) characterized by attaching said memory chip in a bag maintenance case. Therefore, according to invention given in this (3), it can equip with the memory chip attached in the bag maintenance case easily to a printer with an ink bag.

[0099] (4) Said memory chip is an ink bag set given in the aforementioned (2) term or the aforementioned (3) term characterized by preparing corresponding to 1 set of ink bags.

Therefore, according to invention given in this (4), the attribute data of two or more ink bags by one memory chip etc. can be processed easily.

[0100] (5) The ink bag set according to claim 6 characterized by establishing the storage region which can write in the data about two or more amount used or residues of ink of an ink bag in said memory chip.

[0101] Therefore, when using two or more ink bags which held the ink of the same color for a

printer according to invention given in this (5), equipping it with them in order, the amount used or the residue of ink of each ink bag can be managed continuously.

[0102] (6) Said bag set section is a printer according to claim 8 characterized by constituting so that the bag maintenance case where two or more ink bags are held may be set. Therefore, according to invention given in this (6), two or more ink bags can be easily set to the bag set section in the condition [ having held in the bag maintenance case ].

[0103] (7) It is a printer given in any of claim 8 characterized by said data delivery section reading attribute data from a memory chip for printing actuation, claim 10, claim 11, and the aforementioned (6) term said memory chip memorizes the attribute data which is ink, and they are.

[0104] Therefore, according to invention given in this (7), the attribute data of ink can be read from a memory chip, and printing actuation can be controlled exactly.

[0105] (8) said -- data -- delivery -- the section -- a memory chip -- receiving -- ink -- existing -- the amount used -- data -- or -- a residue -- data -- writing in -- addition -- the amount used -- or -- addition -- a residue -- predetermined -- a value -- having reached -- the time -- warning -- a sake -- control action -- carrying out -- things -- the description -- \*\* -- carrying out -- a claim -- eight -- a claim -- ten -- a claim -- 11 -- the above -- ( -- six -- ) -- a term -- and -- the above -- ( -- seven -- ) -- a term -- any -- or -- a publication -- a printer -- .

[0106] Therefore, according to invention given in this (8), the amount used or the residue of ink of an ink bag can be managed proper, it can warn of ink having been lost exactly, and an ink bag can be exchanged to suitable timing. Therefore, the inconvenient situations, such as an ink piece, can be prevented beforehand.

[0107] (9) The printer system which consists of a printer equipped with the bag set section for setting the ink bag with which the ink for printing was held , and the data delivery section which delivers data between said ink bags and memory chips of another object , and a computer which were made to perform control action of warning when the signal from this printer was received and the amount of the addition used or the addition residue of this ink reached a predetermined value .

[0108] Therefore, according to invention given in this (9), the amount used or the residue of ink of an ink bag can be managed proper, it can warn of ink having been lost exactly, and an ink bag can be exchanged to suitable timing. Therefore, the inconvenient situations, such as an ink piece, can be prevented beforehand. Moreover, by not preparing the device in which control action of warning is performed in the interior of a printer, in order to perform this, since \*\* is also good, the configuration of a printer can be simplified.

[0109]

[Effect of the Invention] As mentioned above, as explained in full detail, according to this invention, management of the amount of the ink used or a residue can be performed for every ink bag by writing an ink residue or the amount used in a memory chip. Therefore, when using it again, equipping a printer with the ink bag after being in the middle of the activity of ink and removing an ink bag from a printer, management of the amount of the ink used or a residue can be performed continuously. Moreover, since a lot of data can be written in, ink back management can fully be performed to a memory chip based on a lot of data.

---

## TECHNICAL FIELD

---

[Field of the Invention] This invention breathes out an ink droplet from a nozzle, and relates to the printer equipped with the ink bag set used for the ink jet-type printer which prints in a record form, and its ink bag set.

---

## PRIOR ART

---

[Description of the Prior Art] As an ink bag used for this kind of printer, while holding the ink for printing in a software case, what gave identification marking to the outside surface of that software case is known. The data about the attribute of ink, such as an ink color, are memorized by said identification marking, and where a printer is equipped with an ink bag, reading appearance of the attribute data of ink is carried out from identification marking by the reading section prepared in the printer. And an alarm display etc. is performed, when management of the amount of the ink used of an ink bag or a residue is performed by the control section of a printer and the amount of the ink used or residue of one ink bag reaches a predetermined value.

---

## EFFECT OF THE INVENTION

---

[Effect of the Invention] As mentioned above, as explained in full detail, according to this invention, management of the amount of the ink used or a residue can be performed for every ink bag by writing an ink residue or the amount used in a memory chip. Therefore, when using it again, equipping a printer with the ink bag after being in the middle of the activity of ink and removing an ink bag from a printer, management of the amount of the ink used or a residue can be performed continuously. Moreover, since a lot of data can be written in, ink back management can fully be performed to a memory chip based on a lot of data.

---

## TECHNICAL PROBLEM

---

[Problem(s) to be Solved by the Invention] However, in this conventional ink bag, identification marking is prepared in the outside surface of an ink bag fixed as mentioned above, and residue management of ink is performed by the control section of a printer. For this reason, when using it again, having equipped the printer with that ink bag or another ink back after being in the middle of the activity of ink and removing an ink bag from a printer, the amount (residue) of the data used memorized by the control section of the actual amount used (residue) and a printer was different, and there was a problem that management of the amount of the ink used (residue) could not be performed continuously.

[0004] Moreover, since, as for identification marking, -dimensional [ 1 ] or a two-dimensional bar code is used in many cases, however such a bar code has little storage capacity and rewriting cannot do it, either, sufficient management cannot be performed.

[0005] This invention is made paying attention to the trouble which exists in such a Prior art. The object is to offer the ink bag set which can deal with a lot of data about the ink back, the printer equipped with it, and a printer system while being able to perform management of the amount of the ink used, or a residue for every ink bag.

3.In the drawings, any words are not translated.

---

## MEANS

---

[Means for Solving the Problem] In order to attain the above-mentioned object, in invention according to claim 1 concerning an ink bag set, it is characterized by consisting of the ink bag with which the ink for printing was held, its ink bag, and a memory chip in which the data about nothing and an ink bag are written in another object.

[0007] Therefore, according to this invention according to claim 1, management of the amount of the ink used or a residue can be performed for every ink bag by writing the amount used or the residue of ink in a memory chip. Therefore, when using it again, equipping a printer with the ink bag after being in the middle of the activity of ink and removing an ink bag from a printer, management of the amount of the ink used or a residue can be performed continuously.

Moreover, since a lot of data can be written in, ink back management can fully be performed to a memory chip based on a lot of data.

[0008] In invention according to claim 2, said ink bag is characterized by consisting of a software case in invention according to claim 1. Therefore, according to this invention according to claim 2, since the memory chip is an ink bag and another object, even if the ink bag consists of a software case, a memory chip can be prepared corresponding to an ink bag.

[0009] In invention according to claim 3, said ink bag is characterized by having a stowage for containing a memory chip in invention according to claim 1 or 2. Therefore, while according to this invention according to claim 3 being able to deal with them in one and being able to equip a printer by containing a memory chip to the stowage of an ink bag, fear of loss of a memory chip can be lessened.

[0010] In invention according to claim 4, it is characterized by attaching said memory chip through a connection funiculus to an ink bag in invention according to claim 1 or 2. Therefore, while according to this invention according to claim 4 being able to deal with an ink bag and a memory chip in one and being able to equip a printer with them in the condition of having been connected through the connection funiculus, fear of loss of a memory chip can be lessened.

[0011] In invention according to claim 5, it is characterized by holding said ink bag and memory chip in one bag maintenance case in invention according to claim 1 or 2. Therefore, according to this invention according to claim 5, in the condition of having held in one bag maintenance case, an ink bag and a memory chip can be dealt with in one, and a printer can be equipped with them.

[0012] Moreover, in invention according to claim 6 concerning an ink bag set, it is characterized by consisting of the ink bag to which identification marking was given while the ink for printing was held, its ink bag, and a memory chip in which the data corresponding to nothing and said identification marking are written in another object. Therefore, when a printer is equipped with an ink bag and a memory chip by writing the data of the identification marking on an ink bag in a memory chip according to this invention according to claim 6, it can be used for decision of those compatibility etc.

[0013] In invention according to claim 7, it is characterized by writing in the data corresponding to the identification marking of two or more ink bags in invention according to claim 6 at said memory chip. Therefore, according to this invention according to claim 7, the attribute data read in the identification marking of two or more ink bags by one memory chip can be written in, and data processing of those ink bags can be performed easily.

[0014] Furthermore, in invention according to claim 8 concerning a printer, it is characterized by having the bag set section for setting the ink bag with which the ink for printing was held, and the data delivery section which delivers data between said ink bags and memory chips of another object. Therefore, according to this invention according to claim 8, while setting an ink bag to the bag set section, where the data delivery section and a corresponding location are equipped

with a memory chip, management of the amount of the ink used or a residue etc. can be performed easily.

[0015] In invention according to claim 9, said bag set section is characterized by constituting so that the ink bag which consists of a software case may be set in invention according to claim 8. Therefore, according to this invention according to claim 9, the ink bag which consists of a software case can be set to the bag set section easily and certainly.

[0016] moreover, in invention according to claim 10 concerning a printer The bag set section for setting the ink bag with which the ink for printing was held, The data delivery section which delivers data between said ink bags and memory chips of another object, The mark reading section which reads the identification marking attached on said ink bag, It is characterized by having compared the data read in the memory chip by said data delivery section with the data read in identification marking by the mark reading section, and having a distinction means to distinguish the compatibility of a memory chip and an ink bag.

[0017] Therefore, according to this invention according to claim 10, when a printer is equipped with an ink bag and a memory chip, compatibility of that memory chip and ink bag can be judged to accuracy. Therefore, the inequality of a memory chip and an ink bag can be controlled.

[0018] furthermore, in invention according to claim 11 concerning a printer The bag set section for setting the ink bag with which the ink for printing was held, The data delivery section which delivers data between said ink bags and memory chips of another object, When it is supervised that desorption exchange of an ink bag and a memory chip is not mostly performed at the same stage by monitor means to supervise desorption exchange of said ink bag and a memory chip, and its monitor means, It is characterized by having the control means to which the control action for warning is made to carry out.

[0019] Therefore, according to this invention according to claim 11, in case desorption exchange of an ink bag and the memory chip is carried out to a printer, it can supervise proper whether those desorption exchange was performed mostly at the same stage. Therefore, it can control that desorption exchange only of either of an ink bag and a memory chip is carried out, and can prevent that exchange of another side is forgotten [ most ].

[0020] In invention according to claim 12, said monitor means is characterized by consisting of the data delivery section which delivers data between memory chips, and the mark reading section which reads the identification marking attached on the ink bag in invention according to claim 11. Therefore, it is not necessary to prepare a pilot switch etc. independently as a monitor means, and, according to this invention according to claim 12, a configuration can be simplified.

[0021] The bag set section for setting the ink bag with which the ink for printing was held in invention according to claim 13, The printer equipped with the data delivery section which delivers data between said ink bags and memory chips of another object, The data which received the signal from this printer and were read in the memory chip by said data delivery section, The data read in identification marking by the mark reading section are compared, and it consists of computers which were made to perform distinction actuation which distinguishes the compatibility of a memory chip and an ink bag.

[0022] Therefore, according to this invention according to claim 13, when a printer is equipped with an ink bag and a memory chip, compatibility of that memory chip and ink bag can be judged to accuracy. Therefore, the inequality of a memory chip and an ink bag can be controlled. Moreover, by not preparing the device in which distinction actuation which distinguishes the compatibility of a memory chip and an ink bag by the comparison of data is performed in the interior of a printer, in order to perform this, since \*\* is also good, the configuration of a printer

can be simplified.

[0023] The bag set section for setting the ink bag with which the ink for printing was held in invention according to claim 14, The printer equipped with the data delivery section which delivers data between said ink bags and memory chips of another object, When the signal from this printer is received, desorption exchange of said ink bag and a memory chip is supervised and it is supervised that desorption exchange of an ink bag and a memory chip is not performed mostly at the same stage, It is made to consist of computers which were made to perform control action for warning.

[0024] Therefore, according to this invention according to claim 14, in case desorption exchange of an ink bag and the memory chip is carried out to a printer, it can supervise proper whether those desorption exchange was performed mostly at the same stage. Therefore, it can control that desorption exchange only of either of an ink bag and a memory chip is carried out, and can prevent that exchange of another side is forgotten [ most ]. Moreover, by not preparing the structure which supervises proper whether desorption exchange of an ink bag and a memory chip was performed mostly at the same stage in the interior of a printer, in order to perform this, since \*\* is also good, the configuration of a printer can be simplified.

[0025] In invention according to claim 15, a printer is equipped with an ink backset, the data obtained from the ink back are compared with the data obtained from the memory chip in which the data about this ink bag are written, and the compatibility of a memory chip and the ink back is distinguished. Therefore, according to this invention according to claim 15, the same operation effectiveness as said claim 10 can be acquired.

[0026] In invention according to claim 16, a printer is equipped with an ink backset, and when it is supervised from the data obtained from the ink back, and the data obtained from the memory chip in which the data about this ink bag are written that supervise said ink back and desorption exchange of said memory chip, and these ink back and desorption exchange of a memory chip are not performed mostly at the same stage, it is made to perform warning actuation. Therefore, according to this invention according to claim 16, the same operation effectiveness as said claim 11 can be acquired.

[0027]

[Embodiment of the Invention] (The 1st operation gestalt) Below, the 1st operation gestalt of this invention is explained based on drawing 1 - drawing 5.

[0028] First, the ink bag set of this operation gestalt is explained. As shown in drawing 1 and drawing 2, the body 12 of an ink bag of the ink bag 11 is formed in the shape of a software case with the laminate film which vapor-deposited aluminum to the polyethylene film which has for example, gas barrier property, and the ink for printing is held in the interior. The ink feed hopper 13 protrudes on the edge of the body 12 of an ink bag, and the ink within the body 12 of an ink bag is taken out from this ink feed hopper 13.

[0029] The identification marking 14 which consists of a bar code etc. is given to the edge section of the rear face of said body 12 of an ink bag. Data, such as a class of the attribute data about the ink in the ink bag 11, for example, ink, a color, the date of manufacture, and a plant, are recorded on this identification marking 14.

[0030] The stowage 15 of the shape of a transparent pocket is formed in the center section of the top face of said body 12 of an ink bag. The memory chip 16 which makes the ink bag 11 and another object in a stowage 15 is contained possible [ ejection ], and this memory chip 16 consists of contact mold memory IC etc. The storage region for writing in data, such as the attribute data of the ink in the ink bag 11 corresponding to said identification marking 14, for

example, the class of ink, a color, the date of manufacture, and a plant, is established in this memory chip 16. Furthermore, the storage region for writing in the amount of existing [ used ] and residue of ink in the ink bag 11 is established in the memory chip 16.

[0031] Next, the printer which equips with and uses the ink bag set which consists of said ink bag 11 and memory chip 16 is explained. As shown in drawing 1 and drawing 2, along with the platen which a print head 21 does not illustrate, it is arranged movable by the body 20 of a printer. In the front face of 1 side of the body 20 of a printer, partition formation of two or more bag attaching parts 22 is carried out, and a pair each guide plate 22a is prepared in those bag attaching parts 22. And the ink bag 11 of the shape of said software case is set to each bag attaching part 22 in the condition of having held in the cartridge case 23.

[0032] Said cartridge case 23 is formed in the shape of a hard case by plastics etc. Output port 24 is formed in the end side of a cartridge case 23, and the ink feed hopper 13 of the ink bag 11 held in the cartridge case 23 projects outside from this output port 24.

[0033] A window part 25 is formed in the 1 side base of said cartridge case 23, and the identification marking 14 on the ink bag 11 held in the cartridge case 23 is exposed to a lower part from this window part 25. In case the chip applied part 26 is formed in the outside surface of a cartridge case 23, the ink bag 11 is held in a cartridge case 23 and it sets to the bag attaching part 22 so that output port 24 may be adjoined, a memory chip 16 is taken out from the stowage 15 on the ink bag 11, and this chip applied part 26 is equipped.

[0034] As shown in drawing 1 and drawing 2, opposite arrangement of the supply needle 27 is carried out at each bag attaching part 22 of said body 20 of a printer, and it connects with the print head 21 through the supply tube 28. And where the ink bag 11 is held in a cartridge case 23, when it is set to the bag attaching part 22, the supply needle 27 penetrates the ink feed hopper 13 of the ink bag 11, and is inserted into the body 12 of an ink bag. In this condition, with printing actuation of a print head 21, the ink in the ink bag 11 is supplied to a print head 21 through the supply needle 27 and the supply tube 28, and printing is performed on the record form P.

[0035] The mark reading section 29 is arranged in the edge of one guide plate 22a of each of said bag attaching part 22, and the attribute data of ink is read in the identification marking 14 on the ink bag 11 by this mark reading section 29. The data delivery section 30 is arranged in the edge of guide plate 22a of another side of each bag attaching part 22, and reading is performed in the write-in list about the attribute data of ink, and the data of the amount of existing [ used ], or a residue by this data delivery section 30 in the state of contact to the memory chip 16 on a cartridge case 23.

[0036] Next, the circuitry of the printer which consists of the above structures is explained. As shown in drawing 3, the central processing unit (CPU) 33 which controls actuation of the whole printer is formed in the body 20 of a printer, and the random access memory (RAM) 35 which stores temporarily the read-only memory (ROM) 34 which stored the program of operation, and working data is connected to the CPU33. The printing mechanism 36 containing said print head 21 is connected to CPU33, and an active signal is outputted to this printing mechanism 36. Moreover, the mark reading section 29 and the data delivery section 30 are connected to CPU33, and delivery of the attribute data of ink etc. is performed between this mark reading section 29 and the data delivery section 30.

[0037] Furthermore, the external personal computer (it is hereafter indicated as PC) 38 is connected to CPU33 within said body 20 of a printer through an interface 37, and delivery of print data or an alarm display signal is performed to it between this PC38. When the displays 39, such as a display unit, are connected to PC38 and an alarm display signal is outputted to PC38

from CPU33, a warning message is displayed on this display 39. A keyboard 40 is connected to PC38 and various data are inputted from this keyboard 40.

[0038] Moreover, in this operation gestalt, while the monitor means for supervising desorption exchange of the ink bag 11 and a memory chip 16 by said CPU33, the mark reading section 29, and the data delivery section 30 is made to serve a double purpose, the distinction means is constituted by CPU33. And when it is checked by the mark reading section 29 and the data delivery section 30 that desorption exchange of the ink bag 11 and a memory chip 16 is not performed mostly at the same stage, That is, when it is detected that desorption exchange of another side is not carried out even if it goes through predetermined time after desorption exchange of either of the ink bag 11 and a memory chip 16 was carried out, the alarm display signal to which desorption exchange of another side is urged from CPU33 is outputted.

[0039] Furthermore, the distinction means is constituted by said CPU33 in this operation gestalt. And the attribute data of the ink read in the identification marking 14 on the ink bag 11 in the mark reading section 29 when the body 20 of a printer was equipped with the ink bag 11 and a memory chip 16, The attribute data of the ink read in the memory chip 16 in the data delivery section 30 is compared by CPU33, the compatibility of the ink bag 11 and a memory chip 16 is distinguished, and when it is nonconformance, an alarm display signal to that effect is outputted. [0040] And in case the ink in the ink bag 11 with which said bag attaching part 22 was equipped is used and printing is performed by the print head 21 on the record form P, based on control of CPU33, the data of the amount of existing [ used ] of ink or a residue are written in a memory chip 16 by the data delivery section 30. And when the amount of the addition used or addition residue of ink written in the memory chip 16 reaches a predetermined value, the alarm display signal to which exchange of the ink bag 11 is urged from CPU33 is outputted.

[0041] Next, actuation of the printer equipped with the ink bag set and it which were constituted as mentioned above is explained. First, the monitor actuation at the time of desorption exchange of the ink bag 11 and a memory chip 16 is explained according to the flow chart of drawing 4 . If desorption exchange of either of the ink bag 11 and a memory chip 16 is carried out, the exchange actuation will be detected in the mark reading section 29 or the data delivery section 30 (step S1). Then, to carry out desorption exchange of another side of the ink bag 11 and a memory chip 16, and to detect the exchange actuation in the data delivery section 30 or the mark reading section 29 is waited (step S2).

[0042] And when desorption exchange of another side is not performed even if it carries out fixed time amount progress after desorption exchange of one side of the ink bag 11 and a memory chip 16 is carried out, an alarm display signal is outputted to a display 39 through PC38 from (step S3) and CPU33. Thereby, a warning message, such as "please exchange for an ink bag [ finishing / exchange ] at a corresponding memory chip" or "please exchange for a memory chip [ finishing / exchange ] and a corresponding ink bag", is displayed on a display 39 (step S4).

[0043] Subsequently, reading and processing actuation of data at the time of wearing of the ink bag 11 and a memory chip 16 are explained according to the flow chart of drawing 5 . If a cartridge case 23 is set to the bag attaching part 22 of the body 20 of a printer where the chip applied part 26 of a cartridge case 23 is equipped with a memory chip 16 while the ink bag 11 is held in a cartridge case 23, the data of the identification marking 14 on the ink bag 11 will be read by the mark reading section 29 (step S5). It is distinguished whether with it, the data of a memory chip 16 are read by the data delivery section 30 (step S6), and the reading data from the memory chip 16 exist (step S7).

[0044] In distinction of said step S7, when the reading data from a memory chip 16 exist, it is

distinguished whether the reading data from identification marking 14 and the reading data from a memory chip 16 are in agreement (step S8). And when the ink bag 11 and a memory chip 16 do not correspond when both data are not in agreement namely, an alarm display signal is outputted to a display 39 through PC38 from CPU33. Thereby, for example, "ink bag and a memory chip are not in agreement. A warning message, such as please reequip a match", is displayed on a display 39 (step S9).

[0045] On the other hand, when the reading data from a memory chip 16 do not exist in distinction of said step S7, the attribute data of the ink read in identification marking 14 is written in a memory chip 16 by the data delivery section 30 (step S10). Then, if printing actuation is started based on the attribute data of a memory chip 16, the activity of the ink in the ink bag 11 will be detected (step S11), and the data or the residue of the amount of existing [ used ] of the ink will be written in a memory chip 16 by the data delivery section 30 (step S12). Moreover, in distinction of said step S8, when the reading data from identification marking 14 and the reading data from a memory chip 16 are in agreement, it goes on to steps S11 and S12, and the aforementioned actuation is performed.

[0046] Then, actuation of said steps S11-S13 is repeatedly performed until it is distinguished whether the amount of the addition used or addition residue of ink written in said memory chip 16 reached the predetermined value (step S13) and the amount of the addition used or addition residue of ink reaches a predetermined value. And if the amount of the addition used or addition residue of ink reaches a predetermined value, an alarm display signal will be outputted to a display 39 through PC38 from CPU33. Thereby, the ink of for example, "ink bag was lost. A warning message, such as please exchange for a new thing", is displayed on a display 39 (step S14).

[0047] Therefore, according to this operation gestalt, the following effectiveness can be acquired.

(1) It consists of the ink bag 11 with which the ink for printing was held, its ink bag 11, and a memory chip 16 in which the data about nothing and the ink bag 11 are written in another object in this ink bag set. For this reason, management of the amount of the ink used or a residue can be performed every ink bag 11 by writing the amount used or the residue of ink in a memory chip 16. Therefore, by detaching and attaching a memory chip 16 simultaneously, when using it again, equipping a printer with the ink bag 11 after being in the middle of the activity of ink and removing the ink bag 11 from a printer, management of the amount of the ink used or a residue can be performed continuously. And since writing and elimination are also free while a lot of data can be memorized by the memory chip unlike the identification marking which consists of a bar code, management of the ink bag 11 can be ensured finely. Moreover, even if all the ink of the ink bag 11 is used, since the data of other ink bags 11 can also be written in, unlike the ink bag 11, a memory chip 16 can also be used for a memory chip 16 as it is.

[0048] (2) In this ink bag set, even if the ink bag 11 consists of software cases, a memory chip 16 can be formed corresponding to the ink bag 11, because the memory chip 16 is the ink bag 11 and another object.

[0049] (3) In this ink bag set, it has the stowage 15 for said ink bag 11 to contain a memory chip 16. For this reason, while being able to deal with them in one by containing a memory chip 16 to the stowage 15 of the ink bag 11, even if a memory chip 16 is another object, there is little fear of loss of a memory chip 16.

[0050] (4) In this ink bag set, identification marking 14 is given to said ink bag 11. For this reason, when a printer is equipped with the ink bag 11 and a memory chip 16 by writing the data

of the identification marking 14 on the ink bag 11 in a memory chip 16, it can be used for decision of those compatibility etc.

[0051] (5) In the printer equipped with this ink bag set, the bag attaching part 22 for setting the ink bag 11 with which the ink for printing was held, and the data delivery section 30 which delivers data between the ink bag 11 and the memory chip 16 of another object are formed. For this reason, while setting the ink bag 11 to the bag attaching part 22, where the data delivery section 30 and a corresponding location are equipped with a memory chip 16, management of the amount of the ink used or a residue etc. can be performed easily.

[0052] (6) In this printer, it is in the condition which held the ink bag 11 which consists of a software case in the cartridge case 23, and it is constituted so that it may set to the bag attaching part 22. For this reason, even if the ink bag 11 is a software case, it can set to the body 20 of a printer easily and certainly.

[0053] (7) In this printer, said memory chip 16 memorizes the attribute data of ink, and reads attribute data from a memory chip 16 for printing actuation of said data delivery section 30. For this reason, the attribute data of ink can be read from a memory chip 16, and printing actuation can be controlled exactly.

[0054] (8) In this printer, when said data delivery section 30 writes in the data of the amount of existing [ used ] of ink, or a residue to a memory chip 16 and the amount of the addition used or an addition residue reaches a predetermined value, control action for warning is performed. For this reason, the residue or the amount of ink of the ink bag 11 used can be managed proper, it can warn of ink having been lost exactly, and the ink bag 11 can be exchanged to suitable timing. Therefore, the inconvenient situations, such as an ink piece, can be prevented beforehand.

[0055] (9) In this printer, the data read in the memory chip 16 by the data delivery section 30 are compared with the data read in identification marking 14 by the mark reading section 29, and the compatibility of a memory chip 16 and the ink bag 11 is distinguished. For this reason, when a printer is equipped with the ink bag 11 and a memory chip 16, compatibility of that memory chip 16 and ink bag 11 can be judged to accuracy. Therefore, the inequality of a memory chip 16 and the ink bag 11 can be controlled.

[0056] (10) In this printer, when desorption exchange of the ink bag 11 and a memory chip 16 is supervised and it is supervised that desorption exchange of that ink bag 11 and a memory chip 16 is not performed mostly at the same stage, control action for warning is performed. For this reason, in case desorption exchange of the ink bag 11 and the memory chip 16 is carried out to a printer, it can supervise proper whether those desorption exchange was performed mostly at the same stage. Therefore, it can control that desorption exchange only of either of the ink bag 11 and a memory chip 16 is carried out, and can prevent that exchange of another side is forgotten [ most ].

[0057] (11) In this printer, a means to supervise desorption exchange of said ink bag 11 and a memory chip 16 is constituted between memory chips 16 by the data delivery section 30 which delivers data, and the mark reading section 29 which reads the identification marking 14 attached on the ink bag 11. For this reason, it is not necessary to prepare a pilot switch etc. independently as a monitor means, and a configuration can be simplified.

[0058] (The 2nd operation gestalt) Next, the 2nd operation gestalt of this invention is explained focusing on a different part from said 1st operation gestalt. In addition, in each operation gestalt after the 2nd operation gestalt, it explains focusing on a different part as mentioned above from the 1st operation gestalt.

[0059] Now, in this 2nd operation gestalt, as shown in drawing 6 , each bag attaching part 22 and

two or more corresponding chip insertion sections 43 are formed in the front face of 1 side of the body 20 of a printer. And where the ink bag 11 is held in a cartridge case 23, in case it sets to the bag attaching part 22 of a printer, a memory chip 16 is taken out from the stowage 15 on the ink bag 11, and it inserts in the bag attaching part 22 and the corresponding chip insertion section 43. [0060] In the body 20 of a printer, two or more data delivery sections 30 are arranged so that it may correspond with said each chip insertion section 43. And delivery of the attribute data of the ink in the ink bag 11 and the data of the amount of existing [ used ] of ink and a residue is performed between the memory chips 16 and the data delivery sections 30 which were inserted into the chip insertion section 43.

[0061] Therefore, according to this 2nd operation gestalt, the effectiveness of a publication and the same effectiveness can be acquired to (1) - (11) in said 1st operation gestalt.

[0062] (The 3rd operation gestalt) Next, the 3rd operation gestalt of this invention is explained.

[0063] Now, in this 3rd operation gestalt, as shown in drawing 7, the memory chip 16 is attached to the edge of the ink bag 11 through the connection funiculus 44. And where the ink bag 11 is held in a cartridge case 23, in case it sets to the bag attaching part 22 of a printer, the chip applied part 26 of the outside surface of a cartridge case 23 is equipped with the memory chip 16 attached to the ink bag 11.

[0064] Therefore, according to this 3rd operation gestalt, in addition to the effectiveness of a publication, the following effectiveness can be acquired to (1) in said each operation gestalt, (2), and (4) - (11).

[0065] (12) In this ink bag set, the memory chip 16 is attached through the connection funiculus 44 to the ink bag 11. For this reason, where the ink bag 11 and a memory chip 16 are connected by the connection funiculus 44, while being able to deal with it in one and being able to equip easily to a printer, most loss of a memory chip 16 can be prevented.

[0066] (The 4th operation gestalt) Next, the 4th operation gestalt of this invention is explained. Now, in this 4th operation gestalt, as shown in drawing 8, it is sold in the condition of having held in the bag maintenance case 45 where the ink bag 11 which consists of a software case consists of a hard case, and breakage by the external force of the ink bag 11 is controlled by this. Moreover, the memory chip 16 is also held in the same bag maintenance case 45 as the ink bag 11.

[0067] And in case the ink bag 11 is picked out from the bag maintenance case 45 and it sets to the bag attaching part 22 of a printer through a cartridge case 23, a memory chip 16 is taken out from the bag maintenance case 45, and the chip applied part 26 on a cartridge case 23 is equipped, or it inserts in the chip insertion section 43 of the body 20 of a printer.

[0068] Therefore, according to this 4th operation gestalt, the same effectiveness as (1) in said each operation gestalt, (2), and (4) - (11) can be acquired.

[0069] (The 5th operation gestalt) Next, the 5th operation gestalt of this invention is explained.

[0070] Now, in this 5th operation gestalt, as shown in drawing 9, packing maintenance of the ink bag 11 which consists of two or more software cases is carried out as 1 set into the bag maintenance case 45 which consists of a hard case. In this case, two or more ink bags 11 which two or more ink bags 11 which held unique ink were packed up as 1 set, or held the ink of the same color are packed up as 1 set. And breakage by the external force of each ink bag 11 is controlled with this packing.

[0071] Moreover, in said bag maintenance case 45, one memory chip 16 is held corresponding to 1 set of ink bags 11. The storage region which can write in the attribute data of the ink corresponding to the identification marking 14 of two or more ink bags 11, and the storage

region which can write in the data of the amount of existing [ used ] of ink and the data of a residue about two or more ink bags 11 are established in this memory chip 16.

[0072] And every one ink bag 11 which made 1 set two or more ink bags 11 which held unique ink, and held the ink of ejection or the same color from the bag maintenance case 45 is picked out from the bag maintenance case 45, and it sets to the bag attaching part 22 of a printer through a cartridge case 23. In this case, a memory chip 16 is taken out from the bag maintenance case 45, and the chip applied part 26 on a cartridge case 23 is equipped, or it inserts in the chip insertion section 43 of the body 20 of a printer. In this case, data processing of the ink about two or more ink bags 11 is performed by one memory chip 16.

[0073] Therefore, according to this 5th operation gestalt, in addition to the effectiveness of a publication, the following effectiveness can be acquired to (1) in said each operation gestalt, (2), and (4) - (11).

[0074] (13) In this ink bag set, two or more ink bags 11 are held as 1 set at the bag maintenance case 45. For this reason, it is convenient, when using two or more ink bags 11 which held unique ink for a printer, equipping it with them simultaneously, when using for a printer two or more ink bags 11 which held the ink of the same color, equipping it with them in order, or when selling.

[0075] (14) In this ink bag set, the memory chip 16 is formed corresponding to 1 set of ink bags 11. For this reason, the attribute data of two or more ink bags 11 by one memory chip 16 etc. can be processed easily.

[0076] (15) In this ink bag set, the data corresponding to the identification marking 14 of two or more ink bags 11 are written in said memory chip 16. For this reason, the attribute data read in the identification marking 14 of two or more ink bags 11 by one memory chip 16 can be written in every ink bag 11 certainly, and data processing of those ink bags 11 can be performed easily.

[0077] (16) In this ink bag set, the storage region which can write the data about two or more ink residues or amount of the ink bag 11 used in said memory chip 16 is prepared. For this reason, when using for a printer two or more ink bags 11 which held the ink of the same color, equipping it with them in order, the amount used or the residue of ink of each ink bag 11 can be managed continuously.

[0078] (17) In this ink backset, since the ink back's information can be written in a memory chip 16 when it is the same ink back altogether, a memory chip 16 can be used about.

[0079] (The 6th operation gestalt) Next, the 6th operation gestalt of this invention is explained. Now, in this 6th operation gestalt, as shown in drawing 10, packing maintenance of the ink bag 11 which consists of two or more software cases where unique ink was held is carried out as 1 set into the bag maintenance case 45 which consists of a hard case. Two or more bores 46 are formed in the side attachment wall of the bag maintenance case 45, and the ink feed hopper 13 of each ink bag 11 is exposed outside through these bores 46.

[0080] One memory chip 16 is attached in the side-attachment-wall outside surface of said bag maintenance case 45 corresponding to 1 set of ink bags 11. The storage region which can write in the attribute data of the ink corresponding to the identification marking 14 of two or more ink bags 11, and the storage region which can write in the data of the amount of existing [ used ] of ink and the data of a residue about two or more ink bags 11 are established in this memory chip 16.

[0081] Moreover, the bag attaching part 22 in a printer is constituted so that two or more ink bags 11 can be set in the condition [ having held in the bag maintenance case 45 ]. And while two or more supply needles 27 which can be penetrated to the ink feed hopper 13 of each ink bag 11 are arranged, the data delivery section 30 which can respond to the memory chip 16 on the

bag maintenance case 45 is formed in this bag attaching part 22.

[0082] Therefore, according to this 6th operation gestalt, in addition to the effectiveness of a publication, the following effectiveness can be acquired to (1) in said each operation gestalt, (2), and (4) - (11) and (13) - (16).

[0083] (18) The memory chip 16 is attached in the bag maintenance case 45 in this ink bag set. For this reason, if the ink bag 11 is set to the bag attaching part 22 in the condition of having been held at the bag maintenance case 45, it can equip with the memory chip 16 attached in that bag maintenance case 45 easily to a printer.

[0084] (19) In the printer equipped with this ink bag, the bag attaching part 22 can set now in the condition [ having held two or more ink bags 11 in the bag maintenance case 45 ]. For this reason, two or more ink bags 11 can be picked out from the bag maintenance case 45, it is not necessary to set to the bag attaching part 22, and that set actuation can be performed easily.

[0085] (Example of modification) In addition, it changes as follows and this operation gestalt can also take shape.

- In the aforementioned 1st and 3rd operation gestalt, without forming the ink bag 11 in a hard case, and holding the ink bag 11 in a cartridge case 23, you may constitute so that it may set to the bag attaching part 22 of a printer directly. In this case, the memory chip 16 which was contained by the stowage 15 on the ink bag 11, or was attached to the ink bag 11 through the connection funiculus 44 is constituted so that it may insert in the chip insertion section 43 of the body 20 of a printer like said 2nd operation gestalt.

[0086] - In the aforementioned 4th operation gestalt, without using a cartridge case 23, you may constitute from a condition [ having held the ink bag 11 which consists of a software case in the bag maintenance case 45 which consists of a hard case ] so that it may set to the bag attaching part 22 of a printer directly. In this case, like said 6th operation gestalt, a memory chip 16 is constituted so that it may attach in the side-attachment-wall outside surface of the bag maintenance case 45.

[0087] - You may make it form a memory chip 16 so that it may correspond to each of 1 set of ink bags 11, and may make it form memory chips 16 fewer than the number of 1 set of ink bags 11 in the aforementioned 5th operation gestalt.

[0088] - In the aforementioned 6th operation gestalt, two or more ink bags 11 may be formed in a hard case, and you may constitute from a condition [ having held those ink bags 11 in the bag maintenance case 45 ] so that it may set to the bag attaching part 22 of a printer.

[0089] - In each aforementioned operation gestalt, it may constitute from non-contact mold memory, and a memory chip 16 may be constituted so that data may be transmitted through the data delivery section 30, light, etc. which were prepared in the printer side.

[0090] - In each aforementioned operation gestalt, the identification marking 14 on the ink bag 11 may be omitted, and the attribute data of the ink about the ink bag 11 etc. may be beforehand written in to a memory chip 16, and you may constitute so that printing actuation may be controlled.

[0091] - In each aforementioned operation gestalt, pilot switches, such as a proximity switch, may be prepared as the ink bag 11 and a monitor means of desorption exchange of a memory chip 16, and you may constitute so that a detecting signal may be outputted from these pilot switches at the time of desorption exchange of the ink bag 11 and memory chip 16 to a printer.

[0092] - In each aforementioned operation gestalt, PC38 of the exterior of the body 20 of a printer may be made to perform control action of warning when the monitor, the amount of the addition used, or addition residue of decision of the adaptability of the ink bag 11 and memory

chip 16 by CPU33 stored in the body 20 of a printer or desorption exchange of the ink bag 11 and a memory chip 16 reaches a predetermined value etc. Moreover, it not only connects with PC, but the printer connected to fax or a copy may be made to perform. That is, all the computers [ the computer of a publication ] that can be carried out by not only PC generally called a computer but the processing operation shall be included in a claim.

[0093] Next, the technical thought except having indicated to the claim which can be grasped from the above-mentioned operation gestalt and example of another is indicated below with those effectiveness.

[0094] (1) An ink bag set given in any 1 term of claims 1 - claims 5 which are characterized by giving identification marking to said ink bag.

[0095] Therefore, when a printer is equipped with an ink bag and a memory chip by writing the data of the identification marking on an ink bag in a memory chip according to invention given in this (1), it can be used for decision of those compatibility etc.

[0096] (2) An ink bag set given in any 1 term of claim 1 characterized by holding in a bag maintenance case, having used as 1 set the ink bag which is plurality - claim 5, and the aforementioned (1) terms.

[0097] Therefore, according to invention given in this (2), two or more ink bags are held as 1 set at the bag maintenance case. For this reason, it is convenient when [ which uses two or more ink bags which held the ink of the same color for a printer, equipping it with them in order ] using two or more ink bags which held unique ink for a printer, equipping it with them simultaneously, and case, or bundling up and selling.

[0098] (3) An ink bag set given in the above (2) characterized by attaching said memory chip in a bag maintenance case. Therefore, according to invention given in this (3), it can equip with the memory chip attached in the bag maintenance case easily to a printer with an ink bag.

[0099] (4) Said memory chip is an ink bag set given in the aforementioned (2) term or the aforementioned (3) term characterized by preparing corresponding to 1 set of ink bags.

Therefore, according to invention given in this (4), the attribute data of two or more ink bags by one memory chip etc. can be processed easily.

[0100] (5) The ink bag set according to claim 6 characterized by establishing the storage region which can write in the data about two or more amount used or residues of ink of an ink bag in said memory chip.

[0101] Therefore, when using two or more ink bags which held the ink of the same color for a printer according to invention given in this (5), equipping it with them in order, the amount used or the residue of ink of each ink bag can be managed continuously.

[0102] (6) Said bag set section is a printer according to claim 8 characterized by constituting so that the bag maintenance case where two or more ink bags are held may be set. Therefore, according to invention given in this (6), two or more ink bags can be easily set to the bag set section in the condition [ having held in the bag maintenance case ].

[0103] (7) It is a printer given in any of claim 8 characterized by said data delivery section reading attribute data from a memory chip for printing actuation, claim 10, claim 11, and the aforementioned (6) term said memory chip memorizes the attribute data which is ink, and they are.

[0104] Therefore, according to invention given in this (7), the attribute data of ink can be read from a memory chip, and printing actuation can be controlled exactly.

[0105] (8) said -- data -- delivery -- the section -- a memory chip -- receiving -- ink -- existing -- the amount used -- data -- or -- a residue -- data -- writing in -- addition -- the amount used -- or -

- addition -- a residue -- predetermined -- a value -- having reached -- the time -- warning -- a sake -- control action -- carrying out -- things -- the description -- \*\* -- carrying out -- a claim -- eight -- a claim -- ten -- a claim -- 11 -- the above -- ( -- six -- ) -- a term -- and -- the above -- ( -- seven -- ) -- a term -- any -- or -- a publication -- a printer -- .

[0106] Therefore, according to invention given in this (8), the amount used or the residue of ink of an ink bag can be managed proper, it can warn of ink having been lost exactly, and an ink bag can be exchanged to suitable timing. Therefore, the inconvenient situations, such as an ink piece, can be prevented beforehand.

[0107] (9) The printer system which consists of a printer equipped with the bag set section for setting the ink bag with which the ink for printing was held , and the data delivery section which delivers data between said ink bags and memory chips of another object , and a computer which were made to perform control action of warning when the signal from this printer was received and the amount of the addition used or the addition residue of this ink reached a predetermined value .

[0108] Therefore, according to invention given in this (9), the amount used or the residue of ink of an ink bag can be managed proper, it can warn of ink having been lost exactly, and an ink bag can be exchanged to suitable timing. Therefore, the inconvenient situations, such as an ink piece, can be prevented beforehand. Moreover, by not preparing the device in which control action of warning is performed in the interior of a printer, in order to perform this, since \*\* is also good, the configuration of a printer can be simplified.

## DESCRIPTION OF DRAWINGS

### [Brief Description of the Drawings]

[Drawing 1] The perspective view showing the printer equipped with the ink bag set of the 1st operation gestalt.

[Drawing 2] The decomposition perspective view expanding and showing an ink bag and its wearing configuration.

[Drawing 3] The block diagram showing the circuitry containing the printer of drawing 1 .

[Drawing 4] The flow chart explaining the alarm display actuation at the time of exchange of an ink bag and a memory chip.

[Drawing 5] The flow chart explaining reading and processing actuation of data at the time of wearing of an ink bag and a memory chip.

[Drawing 6] It is a perspective view about the printer of the 2nd operation gestalt.

[Drawing 7] The perspective view showing the ink bag set of the 3rd operation gestalt.

[Drawing 8] The perspective view showing the ink bag set of the 4th operation gestalt.

[Drawing 9] The perspective view showing the ink bag set of the 5th operation gestalt.

[Drawing 10] The perspective view showing the ink bag set and its wearing configuration of the 6th operation gestalt.

### [Description of Notations]

11 -- Ink bag

12 -- Body of an ink bag

14 -- Identification marking

15 -- Stowage

16 -- Memory chip

20 -- Body of a printer

21 -- Print head  
22 -- Bag set section  
23 -- Cartridge case  
26 -- Chip applied part  
29 -- The mark reading section which makes a monitor means serve a double purpose  
30 -- The data delivery section which makes a monitor means serve a double purpose  
33 -- CPU which constitutes a control means and a distinction means  
38 -- Computer  
39 -- Display  
44 -- Connection funiculus  
45 -- Bag maintenance case

---

[Translation done.]